REMARKS/ARGUMENTS

1.) Claim Amendments

Claims 1-30 are pending in the application. Claims 1-30 have been amended herein. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

2.) Claim Rejections – 35 U.S.C. § 102(e)

In paragraphs 1-2 of the Office Action, the Examiner rejected claims 13 and 16-18 under 35 U.S.C. § 102(e) as being anticipated by Graves, et al. (US 2002/0191250). The Applicants have amended the claims to better distinguish the claimed invention from Graves. The Examiner's consideration of the amended claims is respectfully requested.

The multiplexers in Graves are active multiplexers (i.e., they use electrical components to perform the multiplexing function and require electrical power to function. Graves' first multiplexer 12 is an active multiplexer in that it receives all traffic, from radio units (via base stations) as well as from fixed users, and converts the traffic to electrical signals. At the electrical layer, all types of traffic are switched (multiplexed) and then converted to an optical signal for uplink traffic. Graves' Edge Photonic Switch 14 is also an active DWDM (dense wavelength division multiplexing) optical switch, preferably based on MEMS (micro-electromechanical systems) technology. (Page 10, paragraph 0108, lines 36-41). This means that it can switch (multiplex) light signals at the optical layer by electrically controlling MEMS devices, which can be described as micro mirrors that can be moved to reflect incoming light from one fiber to any of multiple outgoing fibers. Thus, in all cases, the multiplexers in Graves are active multiplexers.

Note also that Graves' access multiplexers 12 provide multiplexing of Ethernet packets from end-users 4 onto one or more Sparse-DWDM wavelengths. S-WDM carrier wavelengths must be generated with optical precision so they can map into the tight optical frequency constraints of the DWDM network. (Page 7, paragraph 0091, lines 9-22). The photonic switches consolidate the S-WDM wavelengths into DWDM

wavelengths for transmission. (Page 5, paragraph 0047). Thus, the network described in Graves uses active optical switching with electrical multiplexing at the edges. Graves' solution requires expensive DWDM technology throughout the access network and for the access multiplexers.

The Applicants' claimed invention does not utilize active switching at the optical layer. It focuses on the low cost properties of CWDM (coarse wavelength division multiplexing) for a multi-service access network, where different wavelengths are multiplexed in the access network. CWDM multiplexers are passive wavelength multiplexers. The claimed invention does not use electrical switching between fixed access services and radio access services within the access network.

In Applicants' Fig. 2, there is shown a first multiplexer 220 that contains three functional blocks: an "Ethernet switch" block for active multiplexing (switching) at the electrical layer of fixed access traffic; a "Radio CWDM" block for multiplexing (at the optical layer) the different radio units traffic; and a "CWDM I/O" for passively multiplexing (at the optical layer) the uplink traffic from the "Ethernet switch" and the "Radio CWDM" blocks onto the uplink fiber. Thus, it is only the fixed access user traffic that is actively switched in the "Ethernet switch" block of Fig. 2. The radio traffic is passively multiplexed with the fixed access traffic in the "CWDM I/O" block. This is very different from Graves' all-active approach.

Independent claim 13 has been amended to recite that the multiplexers are passive wavelength multiplexers, and the communications are user communications. The use of passive wavelength multiplexers for the recited functionality is not taught or suggested by Graves. The Applicants note that Graves mentions the use of CWDM wavelength multiplexers only in the context in which a CWDM wavelength multiplexer is in series with a DWDM wavelength multiplexer. Thus, Graves always needs a DWDM multiplexer. Additionally, Graves only uses the CWDM channel (1310nm) for control and management traffic, not for user traffic, as claimed by the Applicants.

Claim 13 has also been amended to recite that the first passive multiplexer includes a radio access unit for transmitting and receiving radio unit user communications with at least one radio unit; a fixed access unit for transmitting and receiving fixed access user communications with fixed access users; and a passive

multiplexer unit for passively multiplexing the radio unit user communications and the fixed access user communications onto a fiber optic communications link. These components are not taught or suggested by Graves. Basis for the amendments is found in the originally filed specification in paragraph 0037 and FIG. 2.

Thus, several limitations in amended claim 13 are not disclosed or suggested by Graves. Therefore, the allowance of amended claim 13 is respectfully requested. Claims 16-18 depend from amended claim 13 and recite further limitations in combination with the novel and unobvious elements of claim 13. Therefore, the allowance of claims 16-18 is respectfully requested.

3.) Claim Rejections – 35 U.S.C. § 103(a)

In paragraphs 3-4 of the Office Action, the Examiner rejected claims 1, 2, 4-8, 10-12, 14, 15, 19, 20 and 22-30 under 35 U.S.C. § 103(a) as being unpatentable over Graves. The Applicants have amended the claims to better distinguish the claimed invention from Graves. The Examiner's consideration of the amended claims is respectfully requested.

Independent claims 1, 7, 19, and 25 have all been amended to recite that the multiplexers are passive wavelength multiplexers. The use of passive wavelength multiplexers for the recited functionality is not taught or suggested by Graves. Therefore, the allowance of amended claims 1, 7, 19, and 25 is respectfully requested for the reasons discussed above for claim 13.

Claims 2 and 4-6 depend from amended claim 1 and recite further limitations in combination with the novel and unobvious elements of claim 1; claims 8 and 10-12 depend from amended claim 7 and recite further limitations in combination with the novel and unobvious elements of claim 7; claims 14 and 15 depend from amended claim 13 and recite further limitations in combination with the novel and unobvious elements of claim 13; claims 20 and 22-24 depend from amended claim 19 and recite further limitations in combination with the novel and unobvious elements of claim 19; and claims 26-30 depend from amended claim 25 and recite further limitations in combination with the novel and unobvious elements of claim 25. Therefore, the

allowance of claims 2, 4-6, 8, 10-12, 14, 15, 20, 22-24, and 26-30 is respectfully requested.

In paragraph 5 of the Office Action, the Examiner rejected claims 3, 9, and 21 under 35 U.S.C. § 103(a) as being unpatentable over Graves in view of Nishihara (US 6,512,616). The Applicants contend that the clarifying amendments to base claims 1, 7, and 19 distinguish the claimed invention from Graves and Nishihara because neither reference teaches or suggests the use of a passive wavelength multiplexer for the functions recited by the Applicants. Claims 3, 9, and 21 depend from amended base claims 1, 7, and 19, respectively, and recite further limitations in combination with the novel and unobvious elements of claims 1, 7, and 19. Therefore, the allowance of claims 3, 9, and 21 is respectfully requested.

CONCLUSION

In view of the foregoing remarks, the Applicants believe all of the claims currently pending in the Application to be in a condition for allowance. The Applicants, therefore, respectfully request that the Examiner withdraw all rejections and issue a Notice of Allowance for claims 1-30.

The Applicants request a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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